CLAIMS

1. A polyclonal antibody directed to a mammalian fertility-associated antigen.

2. The polyclonal antibody of Claim 1, wherein said fertility-associated antigen is from a mammal selected from the group consisting of buffalo, rabbit, bovine, human, sheep, goat, mouse, pig, dog, cat, camelids and felids.

3. The polyclonal antibody of Claim 1, wherein said fertility-associated antigen is from cow.

4. The polyclonal antibody of Claim 3, wherein said fertility-associated antigen has an amino acid sequence as set forth in SEQ ID NO:2.

5. The polyclonal antibody of Claim 3, wherein said fertility-associated antigen has an amino acid sequence that is at least 70% homologous to SEQ ID NO:2.

6. The polyclonal antibody of Claim 3, wherein said fertility-associated antigen has an amino acid sequence that is at least 80% homologous to SEQ ID NO:2.

7. The polyclonal antibody of Claim 3, wherein said fertility-associated antigen has an amino acid sequence that is at least 90% homologous to SEQ ID NO:2.

8. The polyclonal antibody of Claim 3, wherein said fertility-associated antigen has an amino acid sequence that is at least 95% homologous to SEQ ID NO:2.

9. The polyclonal antibody of Claim 1, wherein said fertility-associated antigen is from human.

10. The polyclonal antibody of Claim 9, wherein said fertility-associated antigen has an amino acid sequence as set forth in SEQ ID NO:4.

11. The polyclonal antibody of Claim 9, wherein said fertility-associated antigen has an amino acid sequence that is at least 70% homologous to SEQ ID NO:4.

12. The polyclonal antibody of Claim 9, wherein said fertility-associated antigen has an amino acid sequence that is at least 80% homologous to SEQ ID NO:4.

13. The polyclonal antibody of Claim 9, wherein said fertility-associated antigen has an amino acid sequence that is at least 90% homologous to SEQ ID NO:4.

14. The polyclonal antibody of Claim 9, wherein said fertility-associated antigen has an amino acid sequence that is at least 95% homologous to SEQ ID NO:4.

15. The polyclonal antibody of Claim 1, wherein said polyclonal antibody is in a substantially pure form.

16. The polyclonal antibody of Claim 1, wherein said polyclonal antibody binds to an epitope on the fertility-associated antigen in a region which is at least 70% homologous to amino acid residues 73-269 of SEQ ID NO:2.

17. The polyclonal antibody of Claim 1, wherein said polyclonal antibody binds to an epitope on the fertility-associated antigen in a region which is at least 80% homologous to amino acid residues 73-269 of SEQ ID NO:2.

18. The polyclonal antibody of Claim 1, wherein said polyclonal antibody binds to an epitope on the fertility-associated antigen in a region which is at least 90% homologous to amino acid residues 73-269 of SEQ ID NO:2.

19. The polyclonal antibody of Claim 1, wherein said polyclonal antibody binds to an epitope on the fertility-associated antigen in a region which is at least 95% homologous to amino acid residues 73-269 of SEQ ID NO:2.

20. A method of producing a polyclonal antibody of Claim 1 comprising

injecting a host mammal with the fertility-associated antigen from a mammal other than said host mammal or an antigenic fragment thereof,

raising a polyclonal antibody specific for said fertility-associated antigen in said host mammal, and

recovering said polyclonal antibody from said host mammal.

21. The method of Claim 20, wherein said host mammal is selected from the group consisting of a mouse, a rabbit, a goat, a guinea pig, a horse, a chicken, a donkey, and a hamster.

22. The method of Claim 20, wherein said host mammal is a mouse.

23. The method of Claim 20, wherein said host mammal is a rabbit.

24. The method of Claim 20, wherein said mammal is selected from the group consisting of buffalo, bovine, human, rabbit, mouse, sheep, goat, pig, dog, cat, camelids, and felids.

25. The method of Claim 20, wherein said recovering is by intravenous extraction.

26. The method of Claim 20, wherein said recovering is by exsanguination.

27. The method of Claim 20, wherein said recovering is by fractionation of egg yolks.

28. The method of Claim 20, further comprising purifying said polyclonal antibody to substantial purity.

29. A method of identifying enhanced fertility in a mammalian male out of a group of such males, comprising assaying a sample comprising semen from a source selected from buffalo, bovine, human, rabbit, mouse, sheep, goat, pig, dog, cat, camelids, and felids from each member of said group to determine the presence in said sample of a mammalian fertility-associated antigen, wherein the presence of said protein in said sample is indicative of higher fertility in the donor of said sample and wherein said assaying comprises contacting said sample with the polyclonal antibody of Claim 1.

30. The method of Claim 29, wherein said mammalian male is a bull.

31. The method of Claim 29, wherein said mammalian male is a human.

32. The method of Claim 29, wherein the amount of binding activity occurring is quantified, and wherein a higher degree of binding is indicative of greater fertility.

33. The method of Claim 32, wherein said quantifying is by at least one method selected from the group consisting of Western blot, immunofluorescence, ELISA and colorimetric binding assay.

34. A sensor for detecting enhanced fertility in a mammalian male comprising the polyclonal antibody of Claim 1 immobilized on a support matrix.

35. The sensor of Claim 34, wherein said support matrix is a resin or a membrane.

36. A method of assessing the fertility of a mammalian male comprising.

obtaining a sample comprising semen from a mammal selected from the group consisting of buffalo, bull, human, sheep, goat, rabbit, mouse, pig, dog, cat, camelids, and felids,

processing said sample to obtain seminal plasma proteins or sperm proteins contained therein,

contacting said proteins to a surface which has been functionally derivatized with the polyclonal antibody of Claim 1, and

detecting an interaction between said proteins and said polyclonal antibody.

37. The method of Claim 36, wherein said mammalian male is a bull.

38. The method of Claim 36, wherein said mammalian male is a human.

39. The method of Claim 36, wherein said detecting is by at least one method selected from the group consisting of Western blot, immunofluorescence, ELISA and colorimetric binding assay.

40. The method of Claim 36, wherein the amount of binding activity obtained by said detecting of the sample of a donor is compared to the amount of binding activity occurring for each member of a group of mammalian males to determine the relative presence in said sample of a mammalian fertility-associated antigen.

41. The method of Claim 36, wherein a higher degree of binding activity for the donor compared to the group of mammalian males is indicative of greater fertility.

42. An antisera comprising the polyclonal antibody of Claim 1.

43. A method of identifying enhanced fertility in a mammalian male out of a group of such males selected from the group consisting of buffalo, bull, human, sheep, goat, rabbit, mouse, pig, dog, cat, camelids, and felids, comprising assaying a sample comprising semen from each member of said group to determine the presence in said sample of a mammalian fertility-associated antigen, wherein the presence of said protein in a sample is indicative of higher fertility in the donor of said sample and wherein said assaying comprises contacting said sample with the antisera of Claim 42.

44. The method of Claim 43, wherein said mammalian male is a bull.

45. The method of Claim 43, wherein said mammalian male is a human.

46. The method of Claim 43, wherein the amount of binding activity occurring is quantified, and wherein a higher degree of binding is indicative of greater fertility.

47. The method of Claim 46, wherein said quantifying is by at least one method selected from the group consisting of Western blot, immunofluorescence, ELISA and colorimetric binding assay.

48. A method of assessing the fertility of a mammalian male comprising

obtaining a sample comprising semen from a mammal selected from the group consisting of buffalo, bull, human, sheep, goat, rabbit, mouse, pig, dog, cat, camelids, and felids,

processing said sample to obtain seminal plasma proteins or sperm proteins contained therein,

contacting said proteins to a surface which has been functionally derivatized with the antisera of Claim 42, and

detecting an interaction between said proteins and said polyclonal antibody.

49. The method of Claim 48, wherein said mammalian male is a bull.

50. The method of Claim 48, wherein said mammalian male is a human.

51. The method of Claim 48, wherein said detecting is by at least one method selected from the group consisting of Western blot, immunofluorescence, ELISA and colorimetric binding assay.

52. The method of Claim 48, wherein the amount of binding activity obtained by said detecting of the sample of a donor is compared to the amount of binding activity occurring for each member of a group of mammalian males to determine the relative presence in said sample of a mammalian fertility-associated antigen.

53. The method of Claim 48, wherein a higher degree of binding activity for the donor compared to the group of mammalian males is indicative of greater fertility.

54. A method of purifying mammalian FAA from semen, tissue, or cell extracts comprising:

covalently coupling the antisera of Claim 42 to a solid-phase support matrix to obtain an immobilized anti-FAA polyclonal antibody;

obtaining a sample containing FAA, wherein said sample is selected from the group consisting of semen, tissue, and cell extracts;

contacting said sample with the immobilized anti-FAA polyclonal antibody to obtain an FAA:anti-FAA complex;

washing the FAA:anti-FAA complex with a low-ionic strength buffer to ensure at least 70% purity of the FAA:anti-FAA complex;

recovering a substantially purified FAA by washing the FAA:anti-FAA complex with a buffer having an ionic strength adequate to disrupt the FAA:anti-FAA interaction.